

## PATENT ABSTRACTS OF JAPAN

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## (54) METHOD FOR MEASURING FLOW RATE OF FLUID MACHINE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an inexpensive flow rate measuring method by which the flow rate of an already existing pump, etc., can be measured with high accuracy.

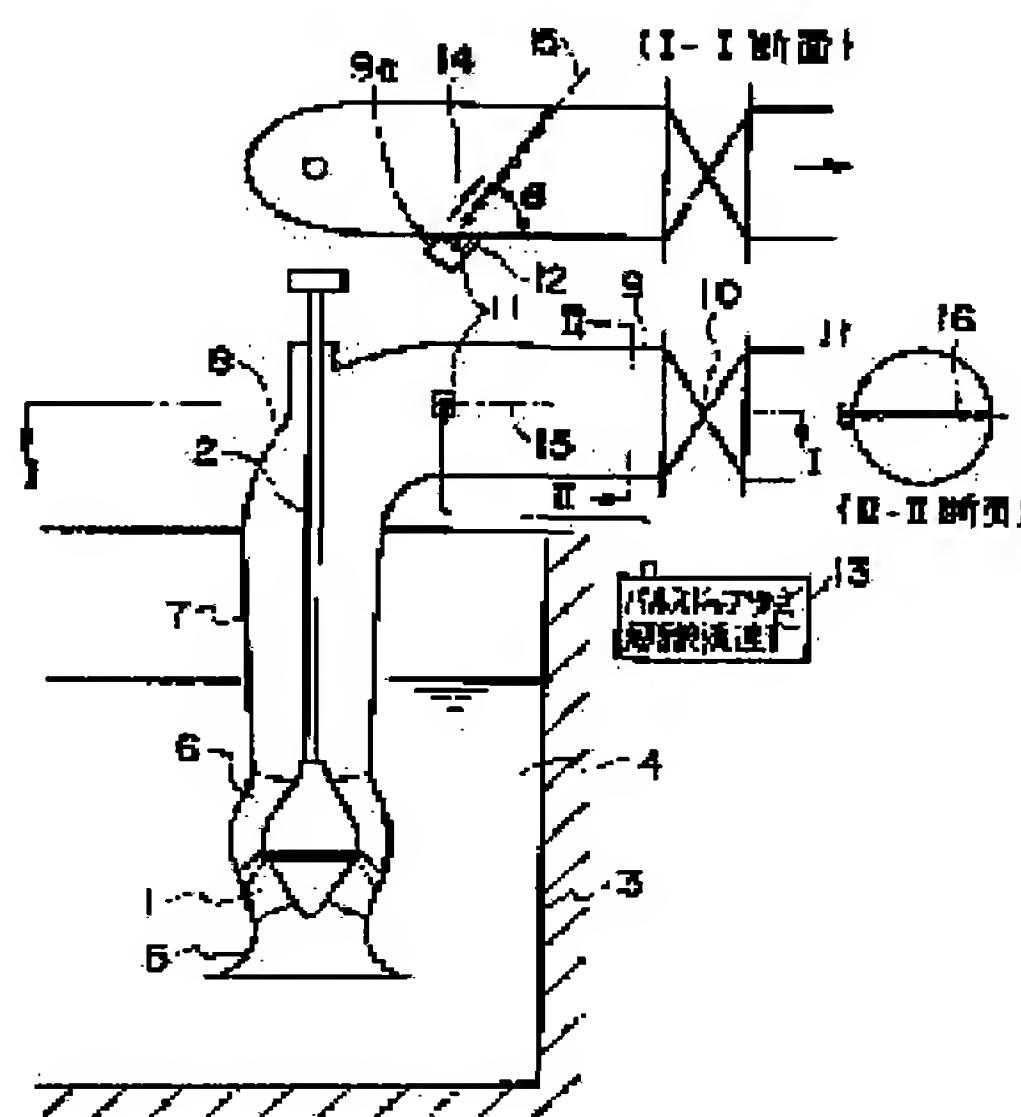
SOLUTION: The ultrasonic sensor 11 of a pulse Doppler type current meter 13 which can measure the flow velocity distribution in a measuring cross section is installed to the discharge section of a drainage pump.

The sensor 11 is tightly brought into contact with the wall 9a of a flow passage 9 with a wedge-like fixture 12 while the wave transmitting and receiving surface of the sensor 11 is inclined by an angle  $\theta$  from the wall 9a.

Ultrasonic waves 14 radiated from the current meter 13 at prescribed time intervals are scattered and reflected by particles 16 in the fluid on a measuring line 15. The flow rate of the fluid can be calculated from the flow velocity of the fluid found from the Doppler shift frequency by processing the signals of reflected waves

and the already know cross-sectional area of the

passage 9. Since the flow velocity distribution in the measuring cross section can be measured easily and a correcting value is found in advance by analyzing turbulences, the measuring accuracy of the current meter is improved.



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